**Design Document**

Player Spaceship

* Move around, following touch or mouse inputs.  
  (Optional) implement a secondary control scheme featuring buttons.
* Shoots automatically, directly upwards in a straight line. Shots deal damage if they collide with an enemy spaceship.   
  (Optional) implement alternative shooting powerups.
* Collides with enemy spaceship shots and enemy spaceships, taking damage.  
  Ship has 5 hit points and is destroyed when it’s hit points reach 0.
* Pick up healing powerups that randomly drop from destroyed enemies.

Enemy Spaceships

* Move around in a pattern determined by their type.
* Shoot downwards in a pattern determined by their type. Shots deal damage if they collide with the player’s spaceship.
* Collide with player spaceship shots, taking damage.  
  Enemy spaceships have hit points determined by their type and are destroyed when their hit points reach 0.
* Randomly drop healing powerups for the player to pick up when destroyed.

Enemy Spawning

* Option 1  
  Enemies spawn randomly, and the boss spawns when X enemy spaceships are destroyed.
* Option 2  
  Enemies spawn in groups (either predetermined or randomly generated), with the next group spawning when the previous group is completely destroyed, and the boss spawning once X groups have been destroyed.

Boss Spaceships

* The same as an enemy spaceship but with the following differences…
* Significantly more hit points.
* Multiple shot patterns that it randomly selects which one to fire.
* Multiple phases with their own shot patterns. The boss transitions between phases when it takes a certain amount of damage.   
  (Optional) changes sprite when it enters a new phase.
* The level is complete when the boss is destroyed.

Game Screens

* Starting menu  
  Gives options to play or quit.
* Level selection menu  
  Gives options for easy, medium, or hard.
* Game screen  
  Has player and enemy spaceships, a HUD with player hit points,  
  (Optional) a counter for the player’s score.   
  Where the game is played.
* Pause screen  
  Shows a “game paused” indicator and gives option to resume the game or quit.

Optional Features

* Score System  
  Records the player’s scores, counts their score for their current game, and displays the high scores at the end of each game.
* Power-Ups  
  In addition to health pickups, enemies may also drop power-ups that will change the player’s shooting pattern for a few seconds.  
  Homing shots, rapid fire, etc.